PONY in Math

Lessons Primary 4 2014

SECOND TERM

Unit 1

in

Fractions

and

Decimals

Fractions

$$\frac{5}{9}$$

Numerator → number of shaded parts
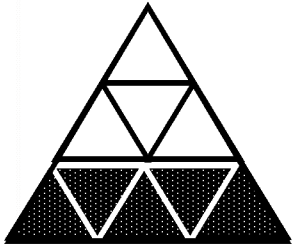
Denominator → number of all parts
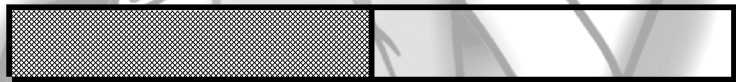
$\dfrac{1}{2}$	One half	
$\dfrac{2}{3}$	Two thirds	
$\dfrac{3}{4}$	Three quarters	
$\dfrac{2}{5}$	Two fifths	
$\dfrac{1}{6}$	One sixth	
$\dfrac{2}{7}$	Two sevenths	
$\dfrac{3}{8}$	Three eighths	
$\dfrac{4}{9}$	Four ninths	
$\dfrac{7}{10}$	Seven tenths	
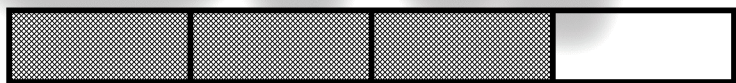
Write the fraction :

Half   = —   Quarter = —   third   = —

One fifth   = —   two sixths = —

three eighths = —   one tenth   = —

Write the fraction in words:

$\dfrac{2}{3}$ =.. $\dfrac{2}{9}$ =..

$\dfrac{3}{4}$ =.. $\dfrac{5}{8}$ =..

$\dfrac{5}{7}$ =.. $\dfrac{3}{10}$ =..

Write the fraction :

$\dfrac{\dots}{\dots}$ —   —   —
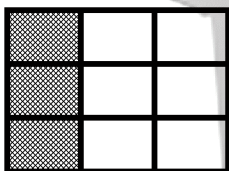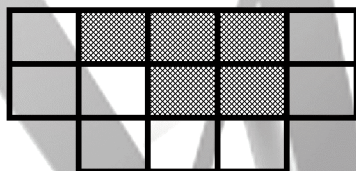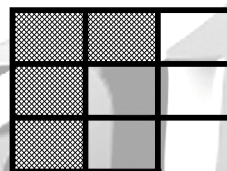
Colour according to the fraction

$\dfrac{5}{6}$ $\dfrac{5}{9}$ $\dfrac{1}{3}$ $\dfrac{1}{2}$ $\dfrac{1}{4}$

Complete

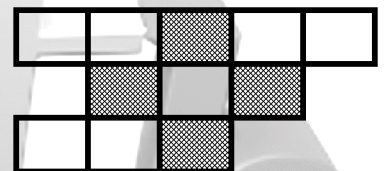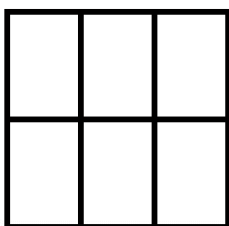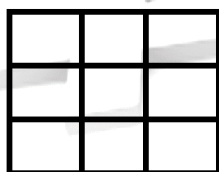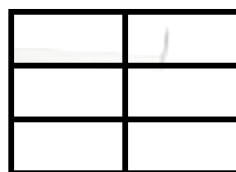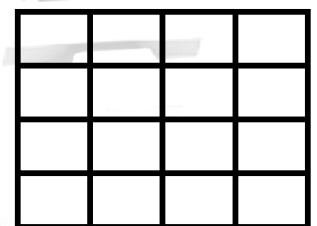$$1 = \dfrac{3}{\ldots} = \dfrac{\ldots}{8} = \dfrac{10}{\ldots} = \dfrac{5}{\ldots} \qquad \dfrac{3}{4} = \dfrac{\ldots}{8} = \dfrac{9}{\ldots} = \dfrac{\ldots}{20} = \dfrac{30}{\ldots}$$

$$\dfrac{1}{2} = \dfrac{5}{\ldots} = \dfrac{3}{\ldots} = \dfrac{6}{\ldots} = \dfrac{\ldots}{20} \qquad \dfrac{2}{3} = \dfrac{\ldots}{6} = \dfrac{6}{\ldots} = \dfrac{\ldots}{15} = \dfrac{20}{\ldots}$$

Simplify :

$$\dfrac{6}{12} = \qquad\qquad \dfrac{7}{21} =$$

$$\dfrac{5}{20} = \qquad\qquad \dfrac{15}{27} =$$

Complete :

$$\dfrac{70}{10} = \dfrac{\ldots}{1} = \ldots \qquad\qquad \dfrac{20}{5} = \dfrac{\ldots}{1} = \ldots$$

$$\dfrac{28}{7} = \dfrac{\ldots}{\ldots} = \ldots \qquad\qquad \dfrac{9}{3} = \dfrac{\ldots}{\ldots} = \ldots$$

Complete :

four quarters $= \dfrac{\ldots}{\ldots} = \ldots$ Six thirds $= \dfrac{\ldots}{\ldots} = \ldots$

$\ldots\ldots\ldots$ halves $= \dfrac{8}{\ldots} = \ldots$ $\ldots\ldots$ fifths $= \dfrac{15}{\ldots} = \ldots$

$$4 = \dfrac{8}{\ldots} = \dfrac{12}{\ldots} = \dfrac{\ldots}{4} = \dfrac{\ldots}{5}$$

$$4 = \dfrac{8}{\ldots} \qquad 3 = \dfrac{9}{\ldots} \qquad 3 = \dfrac{\ldots}{4}$$

$$2 = \dfrac{\ldots}{2} \qquad 4 = \dfrac{8}{\ldots} \qquad 5 = \dfrac{\ldots}{3}$$

Improper fractions and Mixed numbers

$$\frac{3}{5}$$ $$1\frac{1}{2}$$ $$\frac{8}{5}$$

| proper fraction | numerator is smaller than denominator | mixed number | an integer and a fraction | improper fraction | numerator is greater than denominator |

Improper fraction to a mixed number | **Mixed number to an improper fraction**

$$\frac{7}{3} = 2\frac{1}{3}$$ $$2\frac{3}{5} = \frac{13}{5}$$

$$7 \div 3 = 2$$
and remainder is 1

Put each of the following in the form of an improper fraction:

$$5\frac{3}{4} = \frac{......}{......}$$ $$4\frac{2}{3} = \frac{......}{......}$$ $$3\frac{1}{3} = \frac{......}{......}$$

$$2\frac{1}{4} = \frac{......}{......}$$ $$2\frac{1}{5} = \frac{......}{......}$$ $$1\frac{1}{2} = \frac{......}{......}$$

Put each of the following in the form of a mixed number :

$$\frac{8}{3} = ... \frac{......}{......}$$ $$\frac{11}{4} = ... \frac{......}{......}$$ $$\frac{7}{3} = ... \frac{......}{......}$$

$$\frac{9}{4} = ... \frac{......}{......}$$ $$\frac{16}{5} = ... \frac{......}{......}$$ $$\frac{9}{2} = ... \frac{......}{......}$$

Complete:

$$\frac{14}{3} = ... \frac{......}{......}$$ $$\frac{40}{4} = \frac{......}{......}$$ $$\frac{15}{3} = \frac{......}{......}$$

$$3\frac{1}{2} = \frac{......}{......}$$ $$5\frac{3}{7} = \frac{......}{......}$$ $$\frac{32}{5} = ... \frac{......}{......}$$

Common Denominators

$$\frac{3}{4} \quad , \quad \frac{4}{5}$$

To find the common denominator of fractions:

- find L.C.M. of the denominators..>>>> (20)
- divide the L.C.M (20) by (4) and (5)
- Multiply the quotient by (3) and (4)

$$\xrightarrow{\times 5} \quad \frac{3}{4} = \frac{15}{20} \quad \xleftarrow{\div}$$

,

$$\xrightarrow{\times 4} \quad \frac{4}{5} = \frac{16}{20} \quad \xleftarrow{\div}$$

Convert the following fractions so that they have the common denominators

[a] $\dfrac{2}{5}$, $\dfrac{3}{10}$

$$\frac{2}{5} = \frac{}{\dots}$$

$$\frac{3}{10} = \frac{}{\dots}$$

[d] $\dfrac{1}{3}$, $\dfrac{1}{4}$, $\dfrac{5}{8}$

$$\frac{1}{3} = \frac{}{\dots} \qquad \frac{5}{8} = \frac{}{\dots}$$

$$\frac{1}{4} = \frac{}{\dots}$$

[b] $\dfrac{7}{9}$, $\dfrac{2}{3}$

$$\frac{7}{9} = \frac{}{\dots}$$

$$\frac{2}{3} = \frac{}{\dots}$$

[e] $\dfrac{1}{6}$, $\dfrac{2}{9}$, $\dfrac{2}{3}$

$$\frac{1}{6} = \frac{}{\dots} \qquad \frac{2}{3} = \frac{}{\dots}$$

$$\frac{2}{9} = \frac{}{\dots}$$

[c] $\dfrac{3}{4}$, $\dfrac{5}{16}$

$$\frac{3}{4} = \frac{}{\dots}$$

$$\frac{5}{16} = \frac{}{\dots}$$

[f] $\dfrac{2}{5}$, $\dfrac{3}{7}$, $\dfrac{4}{9}$

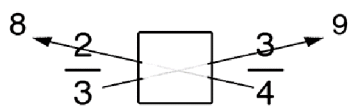$$\frac{2}{5} = \frac{}{\dots} \qquad \frac{4}{9} = \frac{}{\dots}$$

$$\frac{3}{7} = \frac{}{\dots}$$

Comparing and ordering fractions

Which is greater, $\frac{2}{3}$ or $\frac{3}{4}$?

8 $\frac{2}{3}$ ☐ $\frac{3}{4}$ 9

$\frac{2}{3}$ < $\frac{3}{4}$

$\frac{2}{3}$ $\frac{3}{4}$

$\frac{8}{12}$ $\frac{9}{12}$
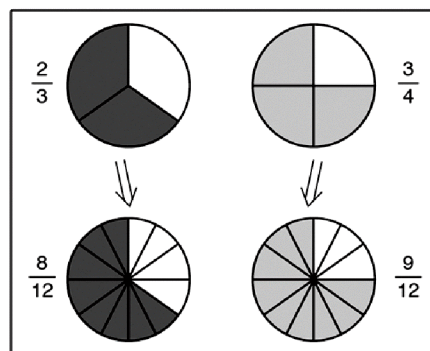
Put the suitable sign (< , = , >) for each ◯ :

(a) $\frac{4}{5}$ ◯ $\frac{3}{4}$

(b) $\frac{5}{8}$ ◯ $\frac{2}{3}$

(c) $\frac{5}{6}$ ◯ $\frac{7}{8}$

(d) $\frac{3}{5}$ ◯ $\frac{2}{3}$

(e) $2\frac{1}{4}$ ◯ $2\frac{1}{3}$

(f) $1\frac{3}{8}$ ◯ $1\frac{2}{5}$

(g) $4\frac{7}{12}$ ◯ $4\frac{2}{3}$

(h) 7 ◯ $6\frac{6}{9}$

Arrange in an ascending order :

$\frac{3}{4}$, $\frac{5}{6}$, $\frac{2}{3}$, $\frac{1}{2}$ …… , …… , …… , ……

$\frac{7}{5}$, $2\frac{1}{4}$, $\frac{5}{4}$, $1\frac{1}{2}$ …… , …… , …… , ……

Arrange in a descending order :

$\frac{3}{5}$, $\frac{5}{6}$, $\frac{2}{5}$, $\frac{1}{2}$ …… , …… , …… , ……

$\frac{7}{2}$, $1\frac{1}{4}$, $\frac{5}{4}$, $\frac{1}{2}$, 2 …… , …… , …… , ……

PONY in Mathematics

Adding and Subtracting fractions

Example :

Simplest form

$$4\frac{1}{12} + 5\frac{1}{4} = 4\frac{1}{12} + 5\frac{3}{12} = 9\frac{4}{12} = 9\frac{1}{3}$$

$$4 + 3\frac{1}{4} = 7\frac{1}{4}$$

Example :

Simplest form

$$4\frac{2}{3} - 2\frac{1}{6} = 4\frac{4}{6} - 2\frac{1}{6} = 2\frac{3}{6} = 2\frac{1}{2}$$

$$4 - 2\frac{1}{6} = 3\frac{6}{6} - 2\frac{1}{6} = 2\frac{5}{6}$$

$$4\frac{1}{3} - 2\frac{5}{6} = 4\frac{3}{6} - 2\frac{5}{6} = 3\frac{9}{6} - 2\frac{5}{6} = 1\frac{4}{6} = 1\frac{2}{3}$$

Find the result :

[a] $\dfrac{1}{2} + \dfrac{1}{5} =$ ....

[b] $\dfrac{1}{2} + \dfrac{2}{5} + \dfrac{1}{4} =$ ....

[c] $4\dfrac{2}{5} + \dfrac{1}{3} =$ ....

[d] $2\dfrac{2}{5} + \dfrac{4}{5} + 2\dfrac{1}{2} =$ ....

[e] $4\dfrac{1}{2} - \dfrac{1}{4} =$ ....

[f] $2 - \dfrac{1}{3} =$ ....

[g] $6\dfrac{1}{6} - 5\dfrac{1}{5} =$ ....

DECIMALS

Fractions which have denominators 10 , 100 , 1000 ... etc
Can be written as decimals
{ . } is called the decimal point

Example:

$\dfrac{6}{10}$ **Is written as**   **0.6**   Is read as   **Six tenths**

$\dfrac{6}{100}$ **Is written as**   **0.06**   Is read as   **Six hundredths**

$\dfrac{66}{100}$ **Is written as**   **0.66**   Is read as   **Sixty six hundredth**

$\dfrac{6}{1000}$ **Is written as**   **0.006**   Is read as   **Six thousandths**

$\dfrac{66}{1000}$ **Is written as**   **0.066**   Is read as   **Sixty six thousandths**

$\dfrac{216}{1000}$ **Is written as**   **0.216**   Is read as   **Two hundred sixteen thousandths**

$\dfrac{16}{10}$ **Is written as**   **1.6**   Is read as   **One and six tenths**

$\dfrac{245}{10}$ **Is written as**   **24.5**   Is read as   **Twenty four and five tenths**

$19\dfrac{6}{100}$ **Is written as**   **19.06**   **Nineteen and six hundredths**

$35\dfrac{25}{100}$ **Is written as**   **35.25**   **Thirty five and twenty five hundredths**

$38\dfrac{2}{1000}$ **Is written as**   **38.002**   **Thirty eight and two thousandths**

Complete :

$\dfrac{3}{10}$ **Is written as** .... **Is read as** ....

$\dfrac{5}{100}$ **Is written as** .... **Is read as** ....

$\dfrac{75}{100}$ **Is written as** .... **Is read as** ....

$\dfrac{5}{1000}$ **Is written as** .... **Is read as** ....

$\dfrac{54}{100}$ **Is written as** .... **Is read as** ....

$\dfrac{654}{1000}$ **Is written as** .... **Is read as** ....

$\dfrac{18}{10}$ **Is written as** .... **Is read as** ....

$\dfrac{123}{100}$ **Is written as** .... **Is read as** ....

$6\dfrac{8}{10}$ **Is written as** .... **Is read as** ....

$26\dfrac{25}{100}$ **Is written as** .... **Is read as** ....

$123\dfrac{3}{100}$ **Is written as** .... **Is read as** ....

Write the following numbers using the decimal point :

1) seven tenths = ……………   2) two hundredths = ……………

3) nine thousandths = …………   4) twelve tenths = ……………

5) twenty four hundredths = …………

6) nineteen thousandths = …………

7) three hundred fifty one hundredths = …………

8) five hundred sixty nine thousandths

9) four and seven tenths = …………

10) six and forty two hundredths= …………

11) twenty and three hundredths= …………

12) eighty five and sixty one thousandths = …………

Write the following decimals in words :

1) 0.3 =……………………………………………………………………

2) 0.05 =……………………………………………………………………

3) 0.008 =……………………………………………………………………

4) 0.34 =……………………………………………………………………

5) 0.047 =……………………………………………………………………

6) 0.238 =……………………………………………………………………

7) 2.5 =……………………………………………………………………

8) 32.8=……………………………………………………………………

9) 4.86 =……………………………………………………………………

10) 42.08 =……………………………………………………………………

11) 32.009 =……………………………………………………………………

12) 56.014 =……………………………………………………………………

13) 23.124 =……………………………………………………………………

……………………………………………………………………

CONVERTING THE FRACTION TO A DECIMALS

$\frac{1}{4}$ to a decimal

$$\frac{1}{4} = \frac{5}{20} = \frac{25}{100} = 0.25$$

$\times 5$ $\times 5$

$\times 5$ $\times 5$

```
      0 . 2 5
4 | 1   0
  -   8
      2   0
  -   2   0
      0   0
```

CONVERTING THE DECIMALS TO A FRACTION

0.75 to a fraction

$\div 5$ $\div 5$

$$0.75 = \frac{75}{100} = \frac{15}{20} = \frac{3}{4}$$

Simplest form

$\div 5$ $\div 5$

Write the following numbers using the decimal point :

$\frac{3}{100}$ = ...

$\frac{1}{10}$ = ...

$\frac{3}{4}$ = ...

$5\frac{8}{100}$ = ...

$\frac{3}{5}$ = ...

$4\frac{20}{25}$ = ...

$\frac{312}{10}$ = ...

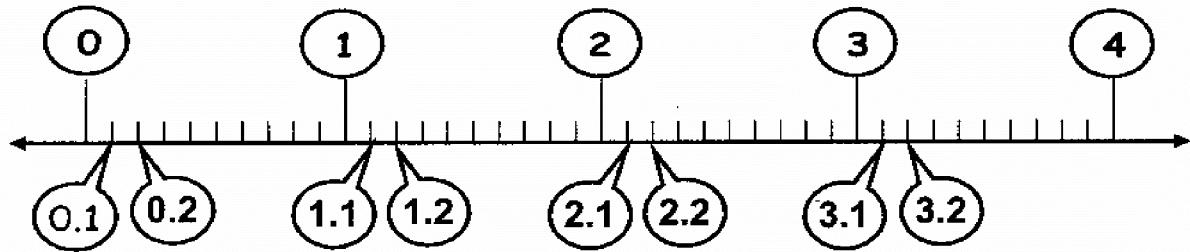$\frac{21}{5}$ = ...

$3\frac{14}{20}$ = ...

Put each of the following in the form of a fraction in its simplest form :

0.8   = ...

0.15   = ...

0.006   = ...

3.25   = ...

0.654   = ...

2.5   = ...

13

The Number line
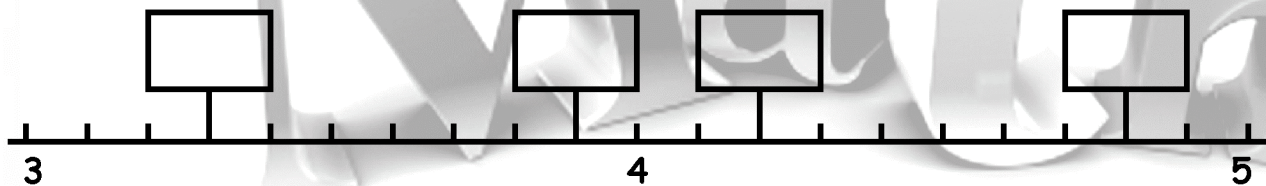

Represent the following decimals on the number line :

$$2.1 \quad , \quad 0.3 \quad , \quad 0.7 \quad , \quad 2.6 \quad , \quad 1.4$$

0   1   2   3

$$0.71 \quad , \quad 0.73 \quad , \quad 0.79 \quad , \quad 0.75$$

0.7   0.8
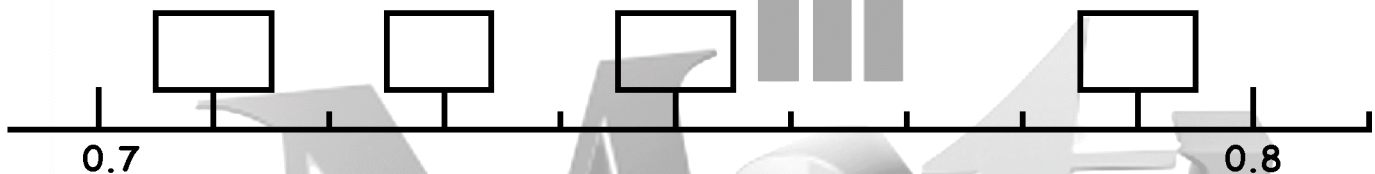
Write the suitable number inside the rectangle

3   4   5

2.52   2.53   2.54

23.15   23.16

14
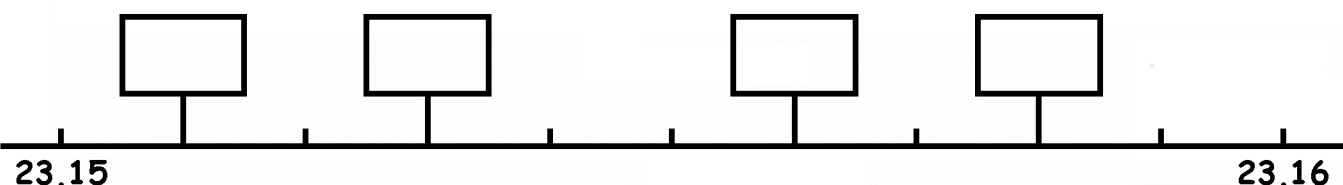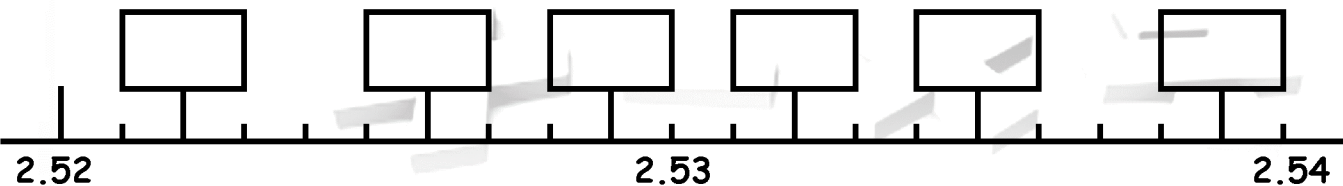
Write three numbers between :

　　　5　and　6　　　　　　　　　　　　2.5　and　2.6

……… , ……… , ………　　　　　　　……… , ……… , ………

　36.8　and　36.9　　　　　　　　　0.85　and　0.86

……… , ……… , ………　　　　　　　……… , ……… , ………

1.215　and　1.216　　　　　　　　8　and　8.1

……… , ……… , ………　　　　　　　……… , ……… , ………

Complete with an integer :

………… > 2.5 > ……………　　　　　………… > 8.04 > ……………

………… > 0.92 > ……………　　　　………… > 12.39 > ……………

Complete as in the example : (3.15= 3 + 0.15)

3.8　 = ………… + ……………　　　　　………… = 4 + 0.3

42.5　= ………… + ……………　　　　　………… = 82 + 0.83

0.35　= ………… + ……………　　　　　………… = 0 + 0.01

Complete as in the example : (0.4 + 0.6 = 1)

0.3 + 0.7 = …………　　　　　　0.25 + 0.75 = ………

0.1 + ………… = 　1　　　　　　　………… + 0.24 = 1

0.105 + 0.895 = …………　　　　0.451 + 0.549 = ………

Complete as in the example : (　53.15= 50 + 3 + 0.1 + 0.05　)

45.123 = ……………………………………………………………………

5.023 = ……………………………………………………………………

41.23 = ……………………………………………………………………

………………… = 500 + 40 + 2 + 0.3 + 0.08

………………… = 60 + 2 + 0.05 + 0.009

The place-value

thousands	Hundreds	tens	units	Decimal point	tenths	hundredths	thousandths	Ten- thousandths
5	7	6	2	.	5	6	4	2
5000	700	60	2		0.5	0.06	0.004	0.0002
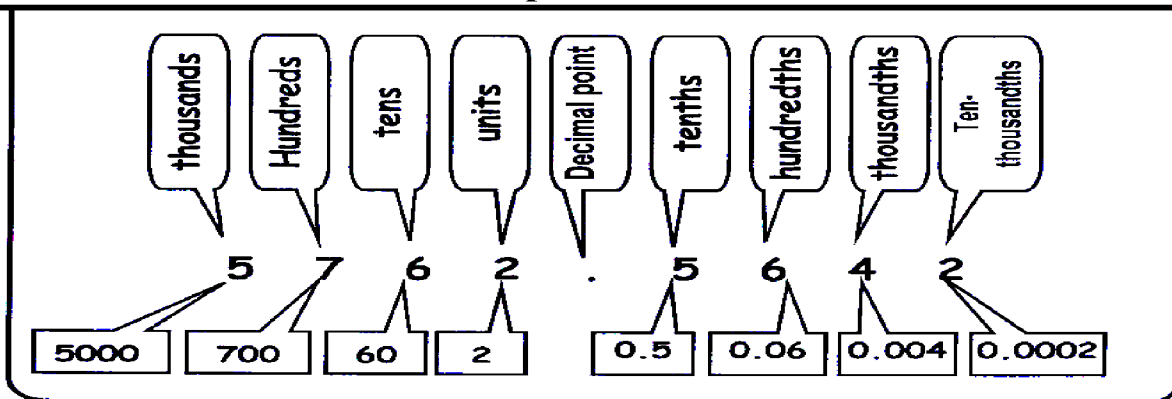
Complete the table :

Number	thousandths	hundreds	tens	units	Decimal point	tenths	hundredths	thousandths	Ten thousandths
5 . 6					.				
3 6 . 5					.				
6 . 4 7					.				
2 7 . 9 8					.				
4 5 6 . 2					.				
1 2 . 5 6 7					.				
1 2 3 . 8					.				
3 6 . 1 2 3					.				

Circle the tenths digit :

36 . 85　　　　　　　78 . 2　　　　　　636 . 4

1 . 124　　　　　　0 . 024

Circle the tens digit :

65 . 78　　　　　　987 . 2　　　　　　16 . 147

5644 . 2　　　　　　102 . 6

write the value of the digit 4 in each of the following :

0.247　　　　4.158　　　　23.425　　　　45.56　　　　0.024

....　　...............　　...............　　...............　　...............

COMPARING DECIMALS

Put the suitable singe < , = or >

9.5	☐	4.8	23.5	☐	28.6
12.4	☐	12.9	9.28	☐	9.6
86.8	☐	86.685	91.5	☐	91.455
27	☐	26.98	0.089	☐	0.18

Arrange the following numbers:

4.35 , 9.75 , 3.54 , 5.79 , 7.59

ascendingly : .... , ... , ... , ... , ...

descendingly : .... , ... , ... , ... , ...

45.23 , 45.09 , 45.98 , 45.67 , 45.81

ascendingly : .... , ... , ... , ... , ...

descendingly : .... , ... , ... , ... , ...

6.75 , 6.08 , 6.125 , 6.8 , 6

ascendingly : .... , ... , ... , ... , ...

descendingly : .... , ... , ... , ... , ...

From the following number Complete:

(1.3 , 3.2 , 10.04 , 3.12 , 3.215 , 1.12)

The numbers greater than 3 are : ....

The numbers smaller than 3 are : ....

The smallest number is : ....

The greatest number is : ....

The numbers between 1 and 3 are...

The numbers between 2 and 4 are ....

The numbers in an ascending order ....

Adding and Subtracting Decimals

Find :

```
  3 5 . 5 6        7 8 5 . 5        9 8 . 3         6 4
+    4 . 9       -  5 6 . 6 2      +   1 . 7       -  8 . 2 2
................    ...............    ...............    ...............
```

17.3 + 4.6   = ...   5.7 - 1.4   = ...

2.65 + 9.3   = ...   12.78 - 3.5   = ...

1.007 + 9   = ...   0.6 - 0.275   = ...

13 + 2.65   = ...   13 - 2.65   = ...

28.65 + 17.3 + 2.05   = ...

(24.235 + 0.065) - (17 + 1.3) = ...

Put the suitable sign < , = or > :

7.9   +   2.3   ☐   11.7   -   1.3

99.89   -   90.9   ☐   10   -   1.01

520.46   +   0.73   ☐   520   +   1.19

Complete :

```
  8  3 . 5  7              9  7 . 4  8
- ☐ ☐ . 7  3  4         + ☐    4  3 . ☐ ☐
─────────────          ─────────────
  2  4 . ☐ ☐ ☐            ☐ ☐ ☐ . 9  3
```

.... + 47.85 = 100   33.3 - .... = 12.008

Dividing by 10 , 100 , 1000 …………..

$$25 \div 10 = \frac{25}{10} = 2.5$$

$$25 \div 100 = \frac{25}{100} = 0.25$$

$$25 \div 1000 = \frac{25}{1000} = 0.025$$

$$213 \div 10 = \frac{213}{10} = 21.3$$

$$213 \div 100 = \frac{213}{100} = 2.13$$

$$213 \div 1000 = \frac{213}{1000} = 0.213$$

Divide :

$15 \div 10 =$ ……………	$28 \div 10 =$ ……………
$45 \div 100 =$ ……………	$36 \div 100 =$ ……………
$125 \div 100 =$ ……………	$6 \div 1000 =$ ……………
$5 \div 10 =$ ……………	$365 \div 1000 =$ ……………

Hala had LE 35 , she bought a ball for 9.75 pounds , and a book for 840 piastres . find the remaining money with her .

……

……

……

Mona has LE 200 , Can she buy a shoes for LE 99.8 , a bag for LE 45.75 and a dress for LE 70.25 .

……

……

……

If Hossam has 425 piastres and Hoda has 980 piastres . find the difference between their money in pounds

……

Unit 2

Approximation

Approximation
To the nearest 10 , 100 , 1000 , 10 000

The Approximation (Rounding) means to replace
the number by another number very near to it

the symbol (~) is read as approximately equal

+1   6 > 5

2 3 5 4 6

↓ ↓ ↓ ↓ ↓

~ 2 3 5 5 0

To the nearest   10

+0   4 < 5

2 3 5 4 6

↓ ↓ ↓ ↓ ↓

~ 2 3 5 0 0

To the nearest   100

+1   5 = 5

2 3 5 4 6

↓ ↓ ↓ ↓ ↓

~ 2 4 0 0 0

To the nearest 1000

+0   3 < 5

2 3 5 4 6

↓ ↓ ↓ ↓ ↓

~ 2 0 0 0 0

To the nearest 10 000

Approximate 457 to the nearest 10

450   451   452   453   454   455   456   457   458   459   460

Middle

457 ~ 460   to the nearest 10

Approximate 457 to the nearest 100

457

400   450   500

middle

457 ~ 500   to the nearest 100

21
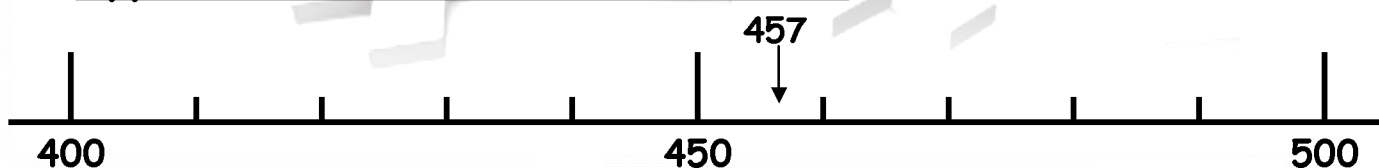
Approximate each of the following to the nearest 10

524   ~   525   ~   526   ~ ....

5320 ~ ....   4308 ~ ....   3095 ~ ....

24.65 ~ ....   999.4 ~ ....   35 ½ ~ ....

Approximate each of the following to the nearest 100

537   ~   558   ~   573   ~ ....

5320 ~ ....   4308 ~ ....   3095 ~ ....

54.65 ~ ....   999.4 ~ ....   95 ½ ~ ....

Approximate each of the following to the nearest 1000

6237 ~ ....   6558 ~ ....   6873 ~ ....

5320 ~ ....   4088 ~ ....   3945 ~ ....

274.65 ~ ....   9999.4 ~ ....   695 ½ ~ ....

Approximate each of the following :

315   ~ ....   To the nearest   Ten

789   ~ ....   To the nearest   100

3156.3 ~ ....   To the nearest   1000

31586   ~ ....   To the nearest   10 000

8658200 ~ ....   To the nearest   Million

736 ½   ~ ....   To the nearest   ten

99999   ~ ....   To the nearest   100 000

determine the position of each number on the number line then complete

480		490

middle
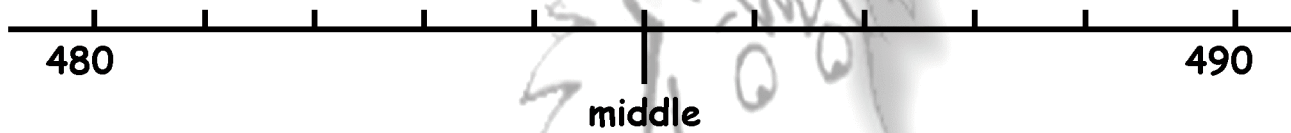
488 ~ …………… to the nearest 10

8400		8500

middle
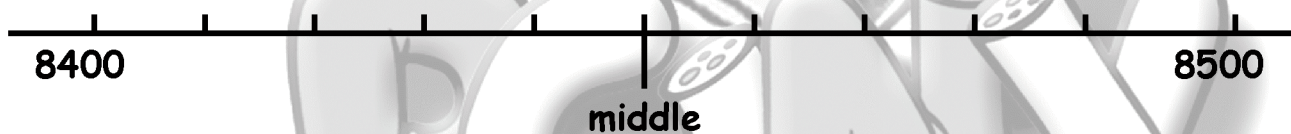
8461 ~ …………… to the nearest 100

54 000		55 000

middle
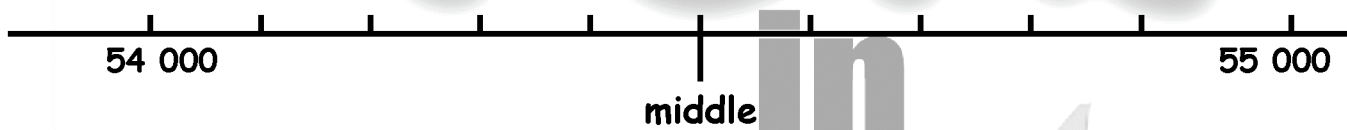
54 150 ~ …………… to the nearest 10000

write all whole numbers which when we approximated each of them to the nearest 10 we obtain 570:

……………… ~ 570	……………… ~ 570	……………… ~ 570
……………… ~ 570	……………… ~ 570	
……………… ~ 570	……………… ~ 570	……………… ~ 570
……………… ~ 570	……………… ~ 570	

564 565 566 567 568 569   571 572 573 574 575

570
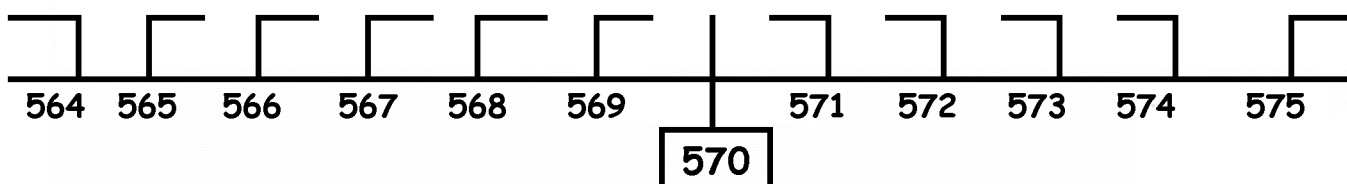
Complete with suitable numbers :

1) 7 3 ☐ 5   ~   7 ☐ 4 ☐   To the nearest 10

2) 7 6 ☐ 4 3 5 ~ 7 7 ☐ ☐ ☐ ☐   To the nearest 10 000

3) 6 0 ☐ 9 ☐ .54 ~ ☐ ☐ 1 ☐ ☐   To the nearest 100

Complete : The greatest whole number that if approximated to:

    a)   the nearest ten gives :

      50 is ………………….   470 is……………….   1200 is …………

    b)   the nearest 100 gives :

      400 is ……………….   4100 is……………….   41 300 is …………

    c)   the nearest 10 000

      70 000 is ………………   410 000 is……………   400 000 is …………

    d)   the nearest 100 000

      800 000 is ……………   4 210 000 is……………   5 000 000 is ………

Complete : The smallest whole number that if approximated to:

    a) the nearest ten gives :

      50 is ………………….   470 is………………….   1200 is …………

    b) the nearest 100 gives :

      400 is ……………….   4100 is………………….   41 300 is …………

    c) the nearest 10 000

      70 000 is ……………   410 000 is……………   400 000 is …………

    d) the nearest 100 000

      800 000 is ……………   4 210 000 is……………   5 000 000 is ………

Approximation
To the nearest Unit (whole number)

+0   4 < 5

2 3 . 4̶

~ 2 3

To the nearest unit

+1   5 = 5

2 3 . 5̶ 4̶

~ 2 4

To the nearest   unit

+1   7 > 5

23 ¾ = 2 3 . 7̶ 5̶

~ 2 4

To the nearest unit

+1   5 = 5

23 ½ = 2 3 . 5̶

~ 2 4

To the nearest whole number

Approximate 5.7 to the nearest unit :

| 5 | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 4.8 | 5.9 | 6 |

Middle

5.7 ~ 6   to the nearest unit
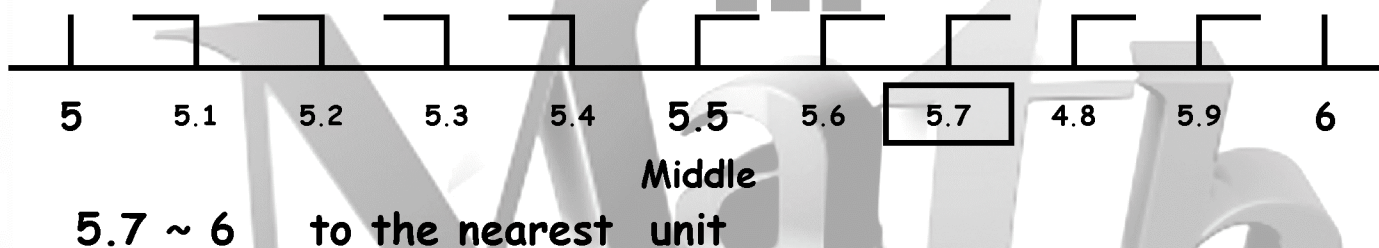
Approximate 5.28 to the nearest unit :

| 5 | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 4.8 | 5.9 | 6 |

5.28

Middle

5.28 ~ 5   to the nearest unit
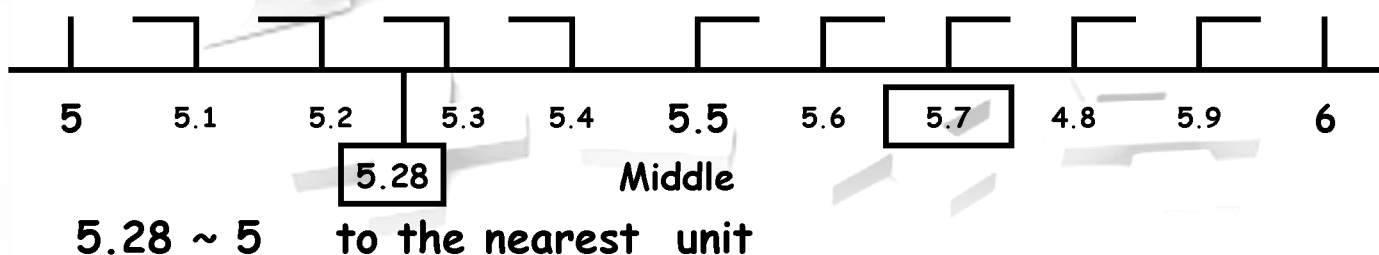
Approximate each of the following to the nearest unit

0.5 ~ ....   0.9 ~ ....   1.4 ~ ....

17.6 ~ ....   3.56 ~ ....   124.8 ~ ....

4.65 ~ ....   9.8 ~ ....   35 ½ ~ ....

Approximate each of the following :

565 249. 45 ~ ....   To the nearest   unit

565 249. 45 ~ ....   To the nearest   Ten

565 249. 45 ~ ....   To the nearest   100

565 249. 45 ~ ....   To the nearest   1000

565 249. 45 ~ ....   To the nearest   10 000

565 249. 45 ~ ....   To the nearest   100 000

determine the position of each number on the number line then complete

4   5

middle
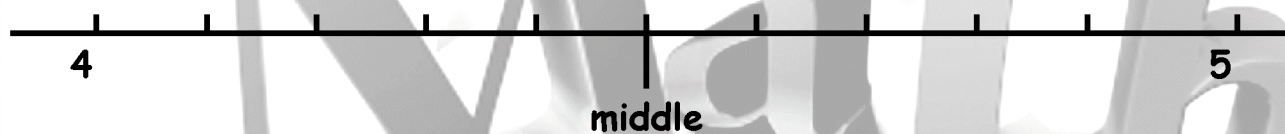
4.6 ~ .... to the nearest unit

8   9

middle
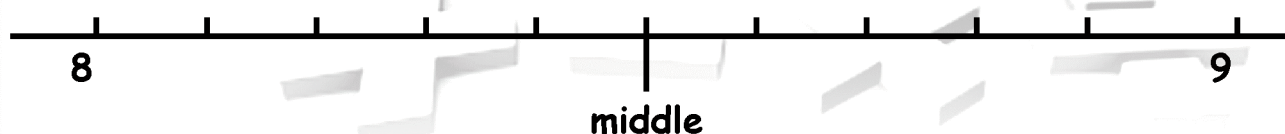
8.46 ~ .... to the nearest whole number

Approximation
To the nearest tenth (0.1 or one decimals place

+1 ⌢ ⬚6 > 5⬚

2 3 5.4 6̸

↓ ↓ ↓ ↓

~ 2 3 5.5

To the nearest   0.1

+0 ⌢ ⬚4 < 5⬚

2 3.5 4̸ 6̸

↓   ↓   ↓

~ 2 3.5

To the nearest   tenth

+1 ⌢ ⬚5 = 5⬚

2.3 5̸ 4̸ 6̸

↓   ↓

~ 2.4

To the nearest
one decimal place

+0 ⌢ ⬚3 < 5⬚

0.2 3̸ 5̸ 4̸ 6̸

↓   ↓   ↓   ↓

~ 0.2

To the nearest
one decimal place

Approximate 4.57 to the nearest tenth :

4.50   4.51   4.52   4.53   4.54   4.55   4.56   4.57   4.58   4.59   4.60
                                          Middle

4.57 ~ 4.6 to the nearest tenth

Approximate 0.833 to the nearest 100

0.833

0.800   0.810   0.820   0.830   0.840   0.850   0.860   0.870   0.880   0.890   0.900
                                        middle
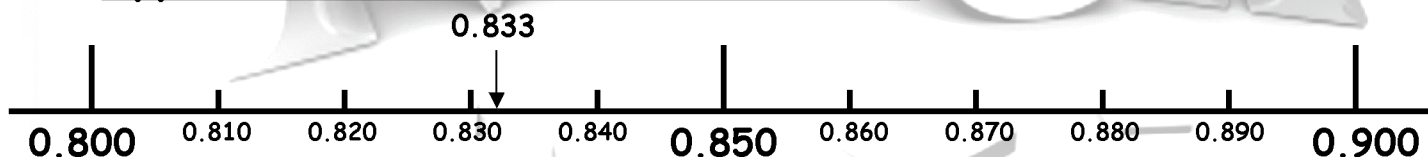
457 ~ 500 to the nearest 100

Approximate each of the following to the nearest tenth.

[

0.58 ~ ……………   0.99 ~ ……………   1.43   ~ ……………

17.04 ~ ……………   3.957 ~ ……………   124.822 ~ ……………

4.65 ~ ……………   9 $\frac{3}{4}$ ~ …………… $\frac{7}{8}$ ~ ……………

Approximate each of the following :

565 249. 45 ~ ……………   To the nearest   tenth

565 249. 45 ~ ……………   To the nearest   unit

565 249. 45 ~ ……………   To the nearest   Ten

565 249. 45 ~ ……………   To the nearest   100

565 249. 45 ~ ……………   To the nearest   1000

565 249. 45 ~ ……………   To the nearest   10 000

565 249. 45 ~ ……………   To the nearest   100 000

determine the position of each number on the number line then complete

4.6 ————————————————————————————— 4.7
                        middle

4.64 ~ …………… to the nearest 0.1

8.4 ————————————————————————————— 8.5
                        middle

8.445 ~ …………… to the nearest whole number

Unit 3

geometry

Congruency

The symbol (≡) is read as congrent to
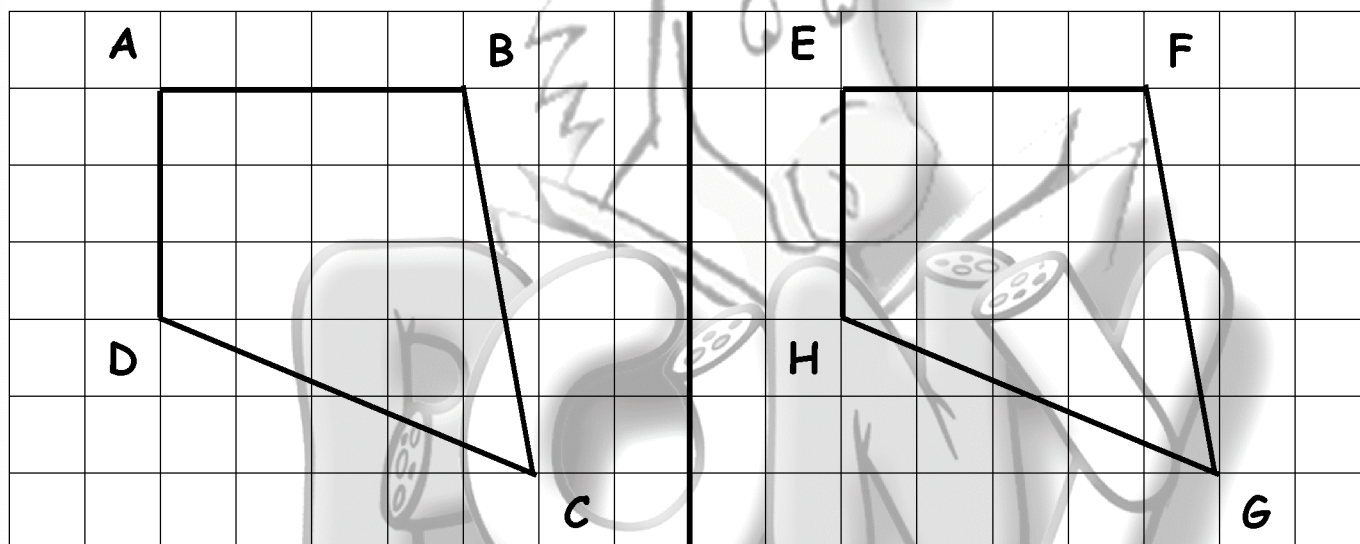
The polygon ABCD ≡ the polygon EFGH

AB ≡ EF   ,   BC ≡ FG | ∠ A ≡ ∠ E   ,   ∠ B ≡ ∠ F
CD ≡ GH   ,   DA ≡ HE | ∠ C ≡ ∠ G   ,   ∠ D ≡ ∠ H

The two polygons are congruent if :
  1)their corresponding sides are equal in length .
  2)their corresponding angles are equal in measure .

The two squares are congruent if :
  - The side length of one of them equals the side length
    of the other .

The two rectangles are congruent if :
  - The length of one of them equals the length of the
     Other and the width of them equals the width of
     the other.
  OR : the two dimensions of one of them equals the
       two dimensions of the other

The two Triangles are congruent if :
The corresponding sides of the two triangles are equal.
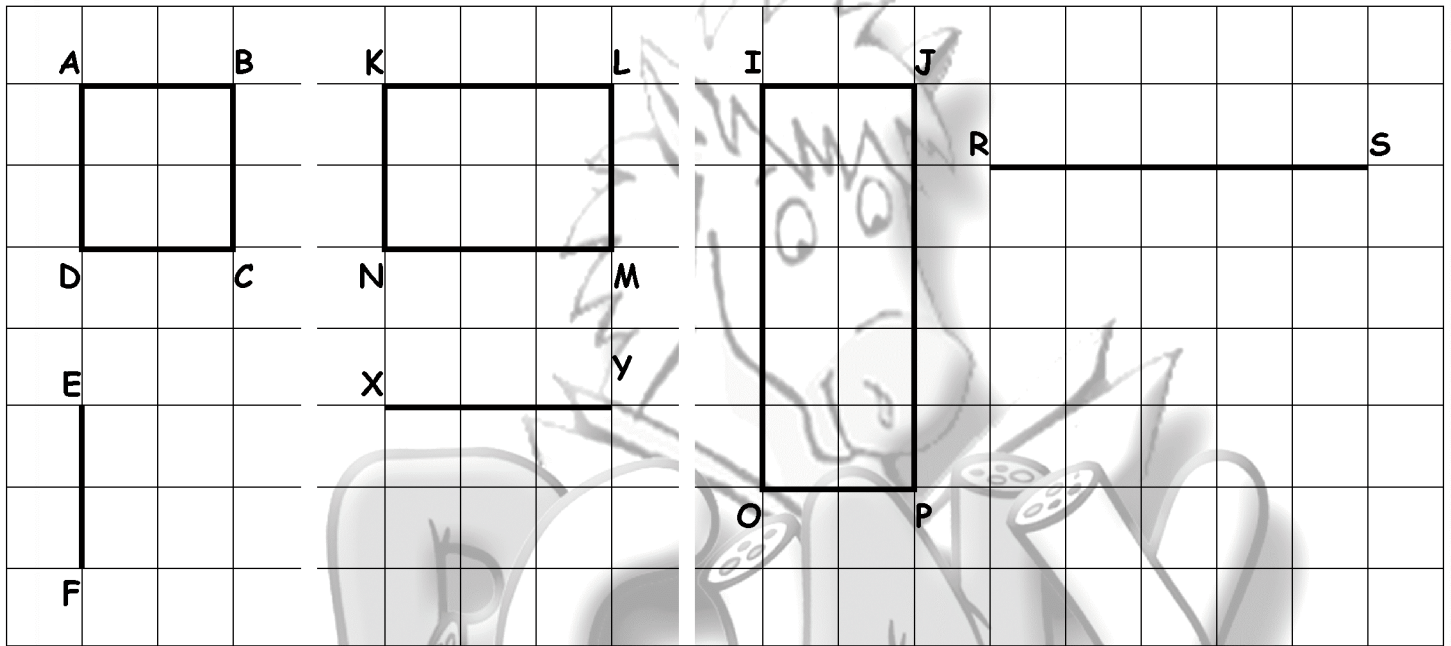
Draw the square EFGH ≡ the square ABCD
Draw the rectangle XYZS ≡ the rectangle KLMN
Draw the rectangle QRST ≡ the rectangle IJPO

Draw a line in the following figure to get congruent figure if possible
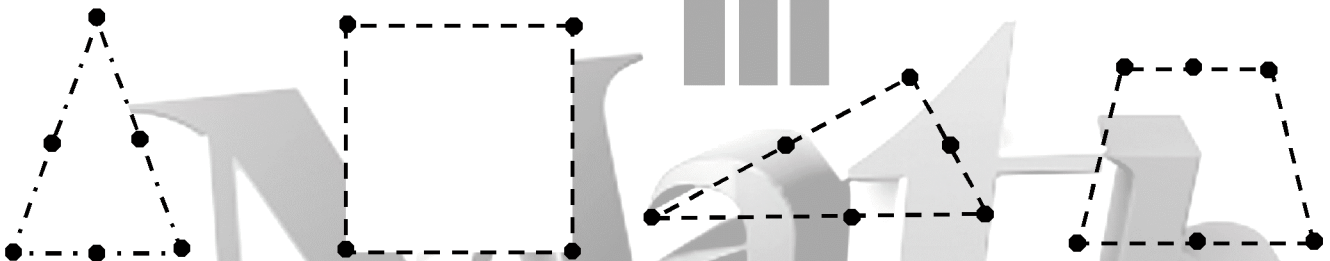
Join each figure to its congruent figure :
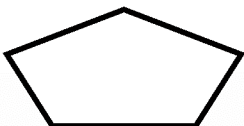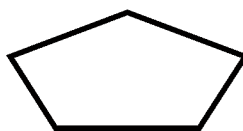
Symmetrical figures
And lines of symmetry

XY is a line of symmetry
A is congruent to B
D is congruent to C
AD ≡ BC
AX ≡ BX
DY ≡ CY
The figure AXYD ≡ the figure BXCY
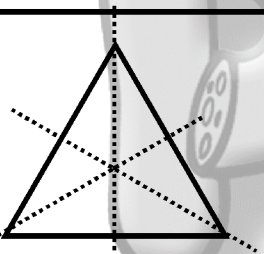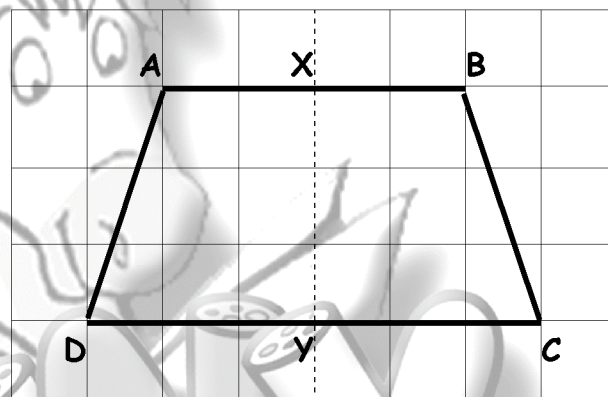
The equilateral triangle
has 3 lines of symmetry

The isosceles triangle
has 1 line of symmetry

The scalene triangle has no line of symmetry
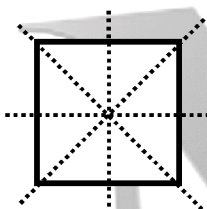
The square has 4
lines of symmetry
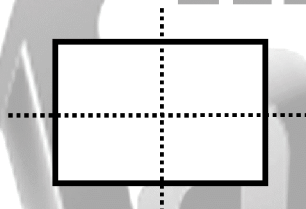
The rectangle has
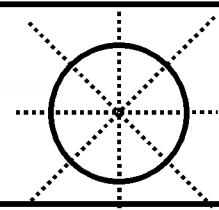2line of symmetry
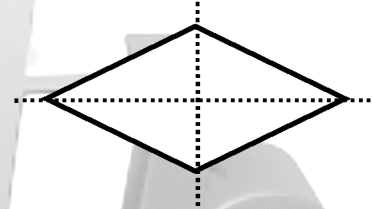
The rhombus has
2line of symmetry

The parallelogram has no line of symmetry

The trapezium has no line of symmetry

The isosceles trapezium has 1 line of symmetry
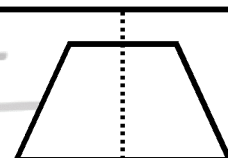
Any line drawn passes through the center of the
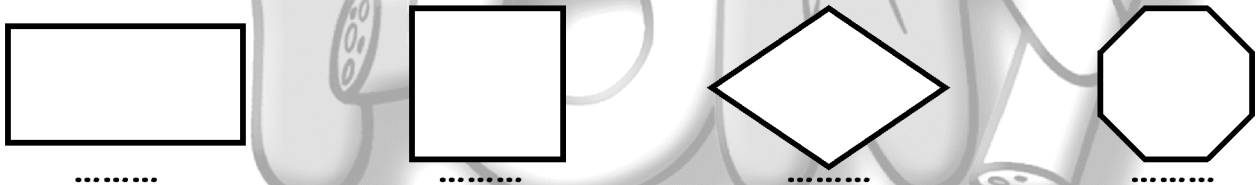circle (the diameter) is a line of symmetry

Complete :

   a) The rectangle has ……… lines of symmetry.

   b) The square has ……… lines of symmetry.

   c) The rhombus has ……… lines of symmetry.

   d) The circle has ……… lines of symmetry.

   e) The isosceles triangle ……… lines of symmetry.

   f) The diagonals in the rectangle divides it into two …………
      triangles , but it is not a line of …………… for it.

Write the number of lines of symmetry .
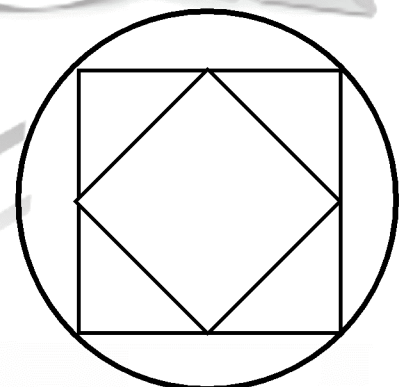
………   ………   ………   ………

Complete the following symmetrical shapes .
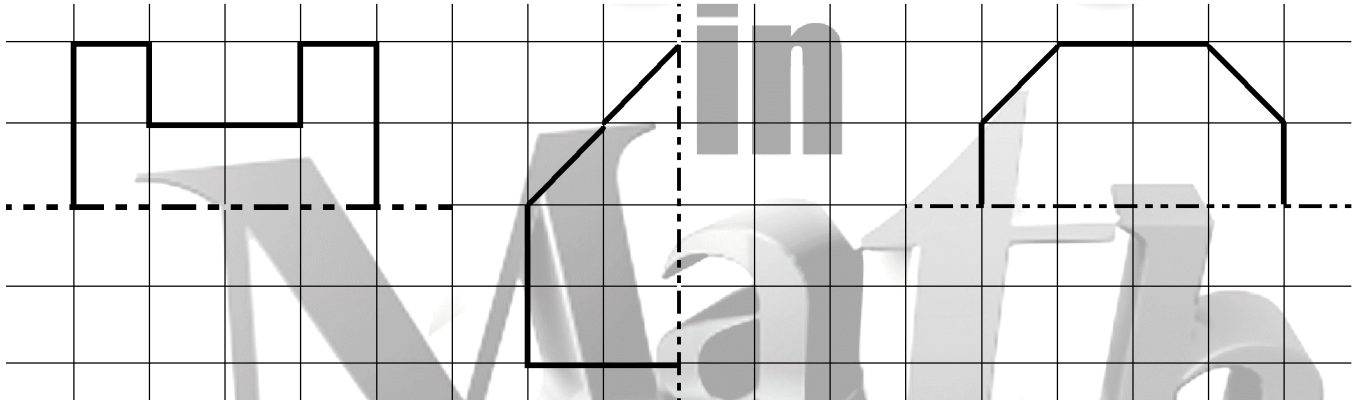
**The opposite figure represent a circle M
and a square ABCD with mid-points of its
sides X , Y , Z and N.**

   a) Draw a common line of symmetry for the
      Three figures.

   b) How many common lines of symmetry
      Are there for three figures………………………

Visual pattern

The pattern is a sequence of numbers, symbols or figures arranged according to a certain system of rule.

Discover the pattern , then complete :

A B C   A B C   A B C   ....

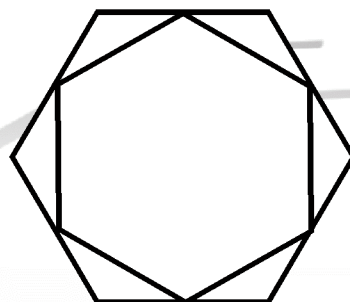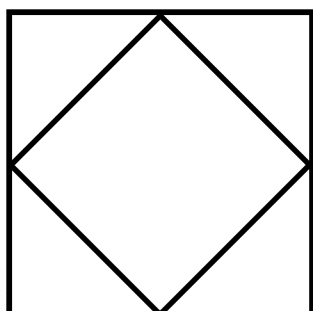+ + −   + + −   + + −   ....

▲ ▼ ▲ ▼ ▲ ▼   ....

▢○ ▢○ ▢○   ....

AB   ABB   ABBB   ABBBB   ....

100 , 90 , 80 , ... , ... , ... , ...

10 , 9.6 , 9.2 , ... , ... , ... , ...

Unit 4

in Measurement

The Capacity

×1 000

Litre dm³   Millilitre cm³

÷ 1 000

The Litre → is the capacity of a cube-shaped container of side length 10 cm

10Cm, 10Cm, 10Cm
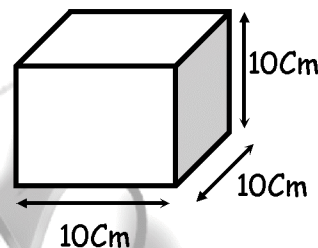
The Millilitre → is the capacity of cube-shaped container of side length 1 cm

1 Litre (L) = 1000 Millilitre (mL)
1 dm³ = 1000 cm³
½ L = 500 mL , ¼ L = 250 mL

Complete :

20 litres = ……………………………… Millilitres

7 000 Millilitres = ……………………………… Litres

7.5 litres = ……………………………… Millilitres

20 Millilitres = ……………………………… Litres

¾ litres = ……………………………… Millilitres

500 Millilitres = ……………………………… Litres

Put the suitable sign (< , = or >) :

¼ litres ☐ 245 Millilitres   2.75 litres ☐ 2750 Millilitres

1.500 litres ☐ 150 Millilitres   500 Millilitres ☐ ¼ litre

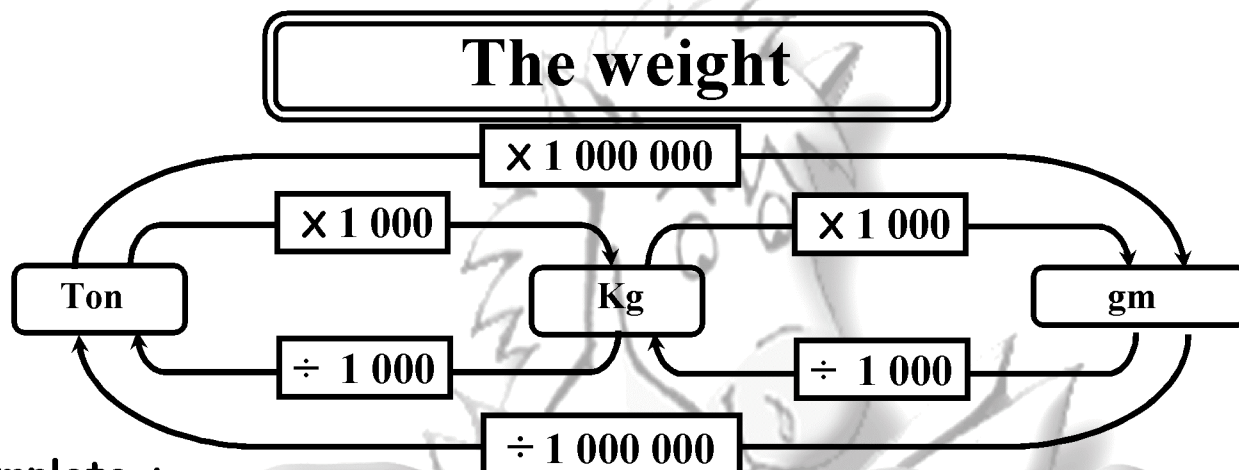750 Millilitres ☐ ¾ Litres   3000 Millilitres ☐ 30 litres

Choose the correct answer :

1) The capacity of a glass of water =…………
(3 litres , 25 Millilitres , 250 Millilitres)

2) Eman bought a bottle of medicine of capacity ……….
(1/5 litre , 2 litres , 1000 millilitres)

3) We have a water tank of capacity ………………
(200 mL , 50 L , 3000 mL)

The weight

| × 1 000 000 |
× 1 000		× 1 000
Ton		**Kg**		**gm**
÷ 1 000		÷ 1 000
÷ 1 000 000

Complete :

20 kg = ………………………………………………… gm

7.5 kg = ………………………………………………… gm

$\frac{3}{4}$ kg = ………………………………………………… gm

500 gm = …………………………………………………kg

7 000 gm = ………………………………………………… Kg

20 gm = ………………………………………………… Kg

20 ton = ………………………………………………… kg

7.5 ton = ………………………………………………… kg

$\frac{3}{4}$ ton = ………………………………………………… kg

500 kg = …………………………………………………ton

7 000 kg = ………………………………………………… Ton

20 kg = ………………………………………………… Ton

the price of 1 kg of meat is LE 35 . A family eats one an
a half kilograms of meat every week . how much money
does this family pay for meat in a month

……………………………………………………………………………………………
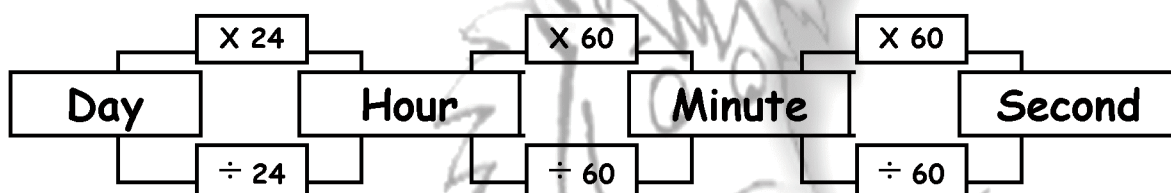
……………………………………………………………………………………………

A man bought 8 tons of iron for building his family's house . if
the price of 1 kilogram of iron is 4.5 pounds find:

1)   the price of one ton of iron.

2)   The money paid for the iron he bought.

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

The Time

X 24		X 60		X 60	
Day		Hour		Minute		Second
÷ 24		÷ 60		÷ 60	

$\frac{1}{2}$ Day	=	12 Hour	$\frac{1}{2}$ Hour	=	30 minutes	$\frac{1}{2}$ minutes	=	30 seconds
$\frac{1}{4}$ Day	=	6 Hour	$\frac{1}{4}$ Hour	=	15 minutes	$\frac{1}{4}$ minutes	=	15 seconds
$\frac{1}{3}$ Day	=	8 Hour	$\frac{1}{3}$ Hour	=	20 minutes	$\frac{1}{3}$ minutes	=	20 seconds
$\frac{3}{4}$ Day	=	18 Hour	$\frac{3}{4}$ Hour	=	45 minutes	$\frac{3}{4}$ minutes	=	45 seconds
$\frac{2}{3}$ Day	=	16 Hour	$\frac{2}{3}$ Hour	=	40 minutes	$\frac{2}{3}$ minutes	=	40 seconds

Complete :

1 day = ………………………………………………………… hours

1 hour = ………………………………………………………… day

1 hour =………………………………………………………… minutes

1 minute = ………………………………………………………… hours

1 minutes =………………………………………………………… seconds

1 second = ………………………………………………………… minutes

1 day = ………… hour = …… X …… = ………… minutes

1 hour = ………… minutes = …… X …… = ………… seconds

1 day = ………… minutes = …… X …… = ………… seconds

Arrange ascendingly

$\frac{2}{3}$ Of a day   ,   18 hours   ,   1020 minutes

……………………… , ……………………… , ………………………

Unit 5

in

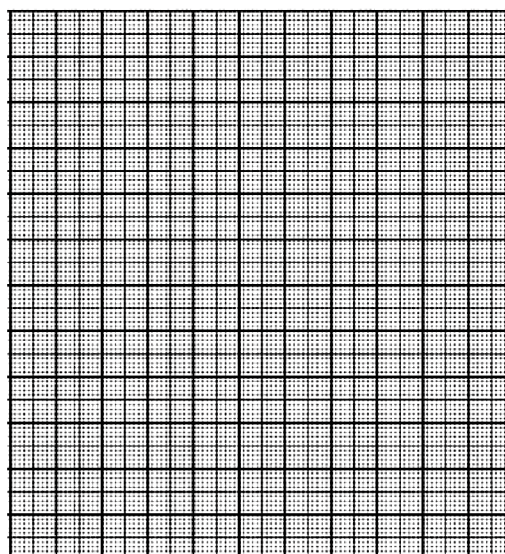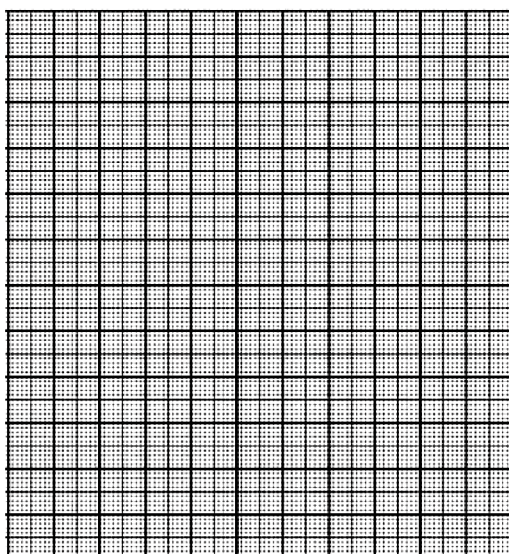## Statistics And Probability

Collecting, Displaying and Representing Data

The following table shows the number of pupils in the first four grades in a primary school :

The grade	First	Second	Third	Fourth
Number of pupils	80	70	100	70

Represent these data by

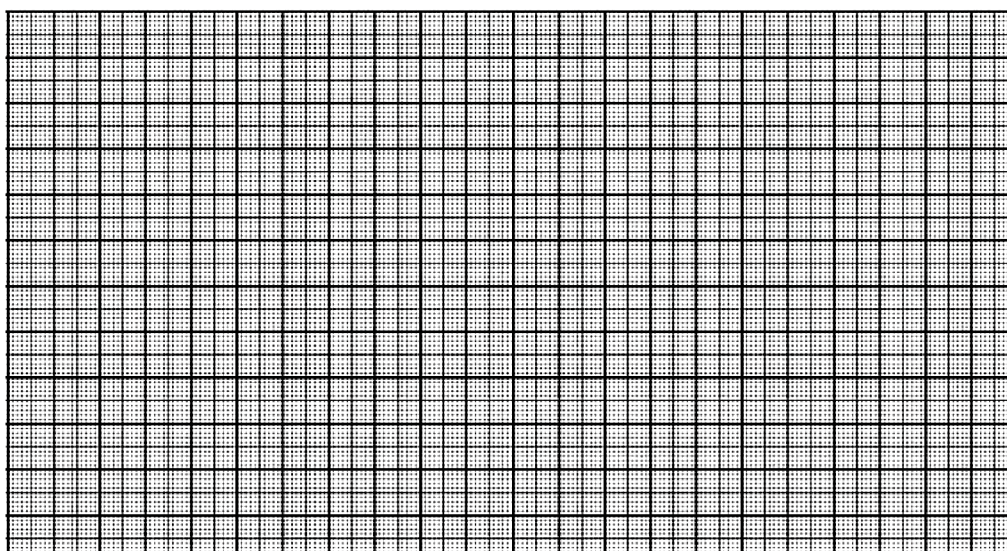| bars		histogram.

The following table shows the marks of some school subjects of two girl pupils in a school :

Complete representation of these data by double bars, showing that in your answer sheet.

Subject / The pupil	Math	Science	Social studies	English
First	30	25	30	20
Second	20	20	25	15

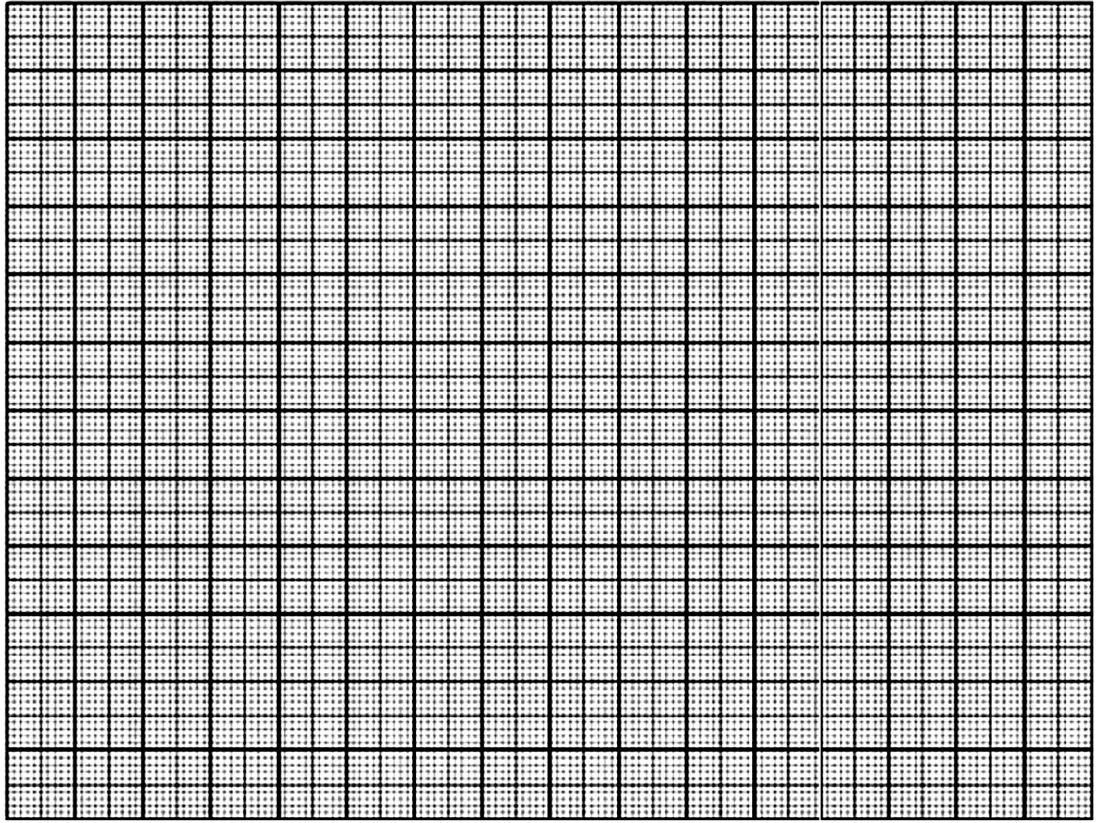| double bars |
|---|

The following table shows the number of pupils in the first four grades in a primary school.

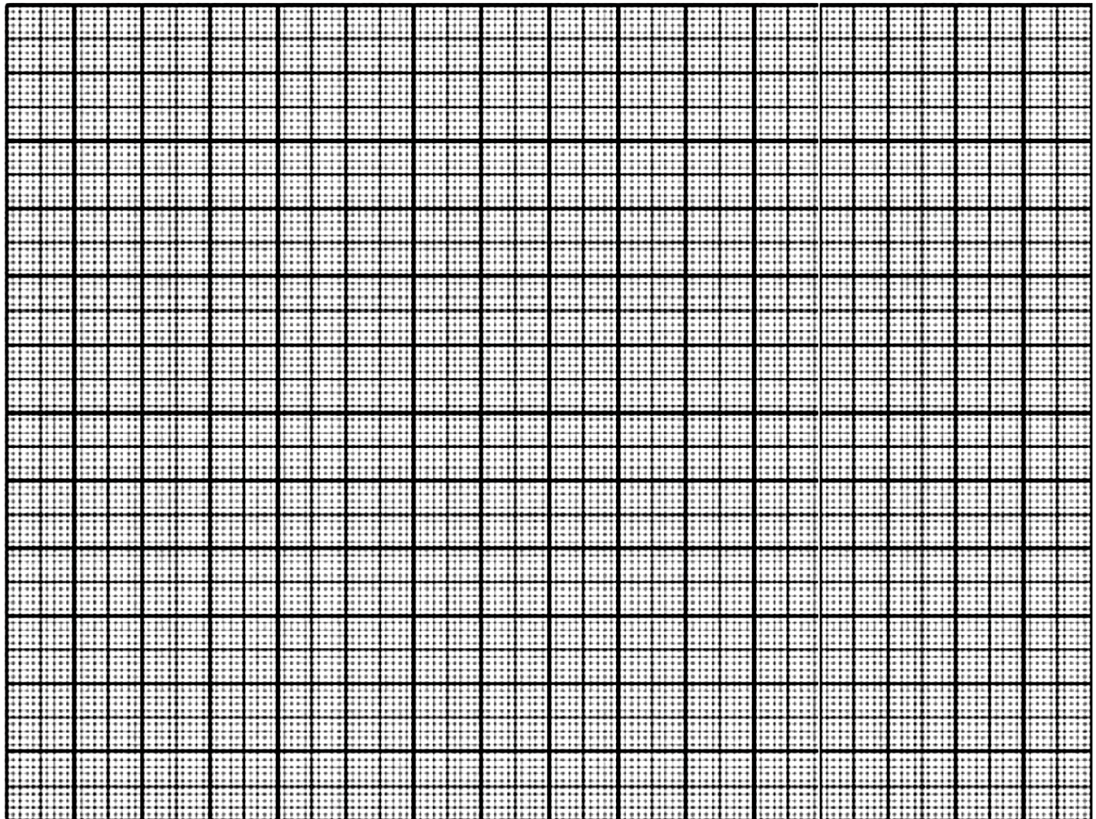| The grade	First	Second	Third	Fourth
Number of pupils	55	65	40	70

Represent these data by histogram.

The following table shows the number of pupils participating in a school activities :

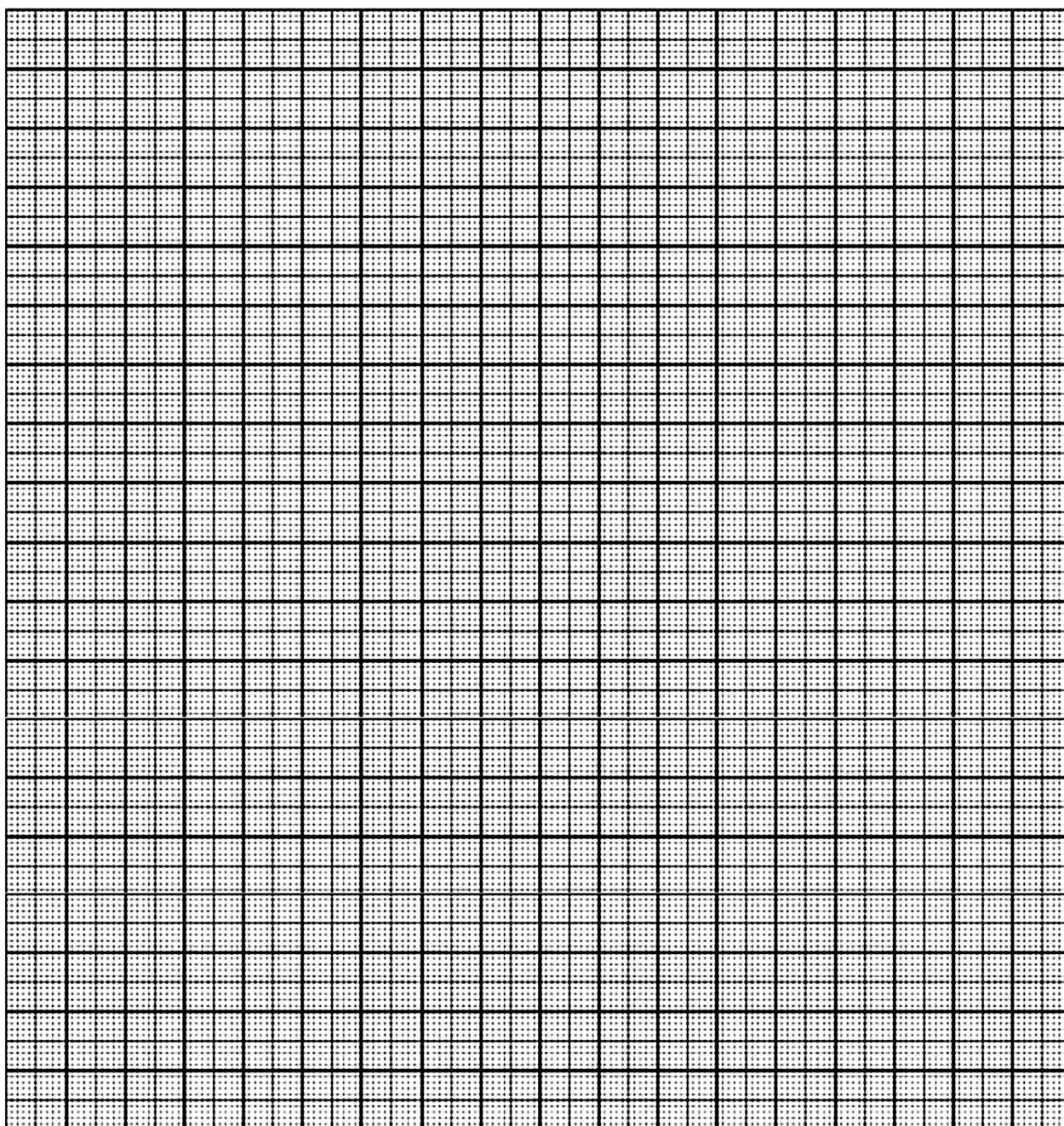| The grade	Sport	Art	Culture
Number of pupils	40	20	30

Represent these data by bar charts.

The following table shows the saved money of Hosam and Mohamed in pounds within 4 weeks successive weeks.

Name \ Week	First	Second	Third	Fourth
Hosam	9	4	5	10
Mohamed	7	8	12	3

Represent these data by double bar charts.

How many different 3-digit numbers are there using 1 , 2 and 3?
Write these numbers (using a tree-diagram)

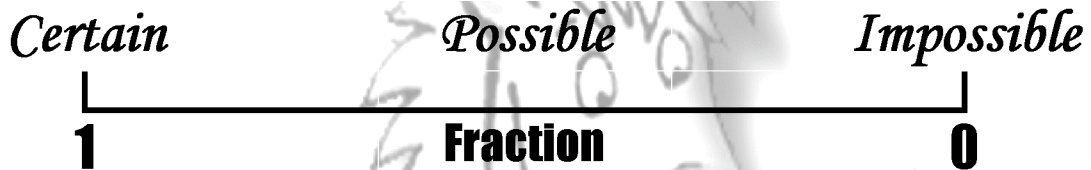## Answer

Resulting number	hundreds	tens	units
.... ←	.... ←	....	
			1
.... ←	.... ←	....	
.... ←	....	....	
			2
.... ←	.... ←	....	
.... ←	.... ←	....	
			3
.... ←	.... ←	....	

The Probability

Certain   *Possible*   *Impossible*

1   **Fraction**   **0**

> the sum of probabilities of all possible events = 1

In the opposite figure there are nine balls in a container

[A] Complete by write " Certain " , " Possible " , " Impossible " :

1) It is ……………………… to draw a black ball.
2) It is ……………………… to draw a white ball.
3) It is ……………………… to draw a green ball.
4) It is ……………………… to draw a ball.

If a container holds 5 black balls and 4 white balls , one ball is drawn:

1) The probability of the drawn ball being black = ………
2) The probability of the drawn ball being white = ………
3) The probability of the drawn ball being red = ………

Kamal spun a coin 100 times. He got
head 45 times. What is the probability
of getting head or tail.
1) the probability of getting heads = ……
2) the probability of getting heads = ……

Sherin had a box of pins in which there were 100 pins. All pins fell
on the floor. Some stood on their bases, like this ⊥ , and others fell
tilted, like that ⊿ If the number of tilted pins were 35 pins,
calculate the probability that a pin falls on its base.
 the probability that a pin falls on its base = …………………………

The figure opposite shows a disc
divided into equal sectors numbered
from 1 to 10.
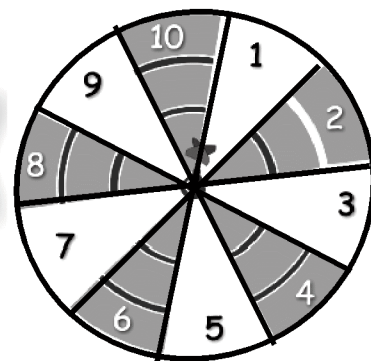
[1] Probability of the pointer pointing at
     The sector of the number 2 = ...

[2] Probability of the pointer pointing at
     The sector of the number 2 = ...

[3] Probability of the pointer pointing at The sector of a number
     more than 8 = ...

[4] Probability of the pointer pointing at The sector of a number Less
     than 8 = ...

If you throw a dice (die) once , what is the probability of seeing :
1)   the number one on the upper face = ...
2)   the number 8 on the upper face = ...
3)   an odd number on the upper face = ...
4)   an even number on the upper face = ...
5)   a number greater than six on the upper face = ...